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Assessment of the Quality Steel Reinforcement Bars Available in Nigerian Market

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[Opeyemi Joshua](#); [Kolapo O. Olusola](#); [Calistus Ayegba](#); and [Adekunle I. Yusuf](#)

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The use of substandard and steel reinforcement rods in the construction of structural steel concrete elements of a building, most especially in floor slabs, has been identified as one of the most important causes of structural failures in buildings in Nigeria. This research investigated the

mechanical properties (yield strength, ductility and the ultimate tensile strength) of 12-mm diameter steel bars commonly used in reinforcing floor slabs using an extensometer. Results obtained from the tests showed that only three (3) brands out of a total of nine (9) tested most commonly used brands of sampled rods showed yield strengths greater than 460N/mm^2 . The yield strengths obtained range between 337.72 N/mm^2 and 569.71 N/mm^2 . The study confirmed that the wide usage of substandard steel reinforcement bars in the Nigerian market is a major contributing factor to increasing incidences of structural building failures in the country when viewed from the angle of variability in material quality.